

Attorney Docket No.: JJL9692

Examiner: Lewis, R.

Art Unit: 3732

AUG 23 2001

RECEIVED

AUG 23 2001

RECEIVED

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE In Re Application of: Jung et al.

Filed: July 12, 2001

Serial No.: 09/904,610

APPARATUS AND METHOD FOR

MEASURING THE COLOR OF TEETH

Assistant Commissioner of Patents Washington, D.C. 20231

## INFORMATION DISCLOSURE STATEMENT

## Sir/Madam:

For:

1. Pursuant to 37 C.F.R. 1.97 and 1.98, and in compliance with 37 C.F.R. 1.56, the Office's attention is directed to the patents, publications and other information listed on the attached PTO-1449. A copy of each listed document is enclosed except for: (a) pending applications or (b) those previously cited or submitted to the Office in the following application(s) upon which this application relies for an earlier filing date under 35 U.S.C. 120:

Serial No.: <u>09/909,664</u> Filing Date: <u>08/12/1997</u> US Pat No.: <u>6,264,470</u>

Regarding the document(s), publication(s) or other information listed on the attached PTO-1449, Applicant(s) believe(s) the same may qualify as "prior" art to this application and should be treated accordingly, although Applicant(s) reserve(s) the right to contest the prior art status of any document, publication or information cited herein.

2. Regarding each listed document that is not in the English language, an English-language translation accompanies this Statement as indicated on the attached PTO-1449 or a concise explanation of the relevance of the document is set forth in the following documents(s):

a counterpart foreign application not more than 3 months prior to the filing of this Statement.

- (b) \_\_\_ The undersigned hereby certifies that no item of information contained in this Statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the undersigned's knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. 1.56(c) more than 3 months prior to the filing of this Statement.
- 5. The Commissioner is hereby authorized to charge any additional fees or credit any overpayment to Deposit Account No. 50-0251.

Respectfully submitted,

Alan R. Landemittelen

Alan R. Loudermilk Registration No. 32,788

Attorney for Applicant(s)

August 17, 2001 10950 N. Blaney Ave., Suite B Cupertino, CA 95014 (408) 342-1866

**CERTIFICATE OF MAILING (37 CFR 1.8a)** 

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the U.S. Postal Service, Express Mail Label No.: <u>EJ740238251US</u>, addressed to the Assistant Commissioner for Patents, this 20th day of August 2001.

Karen A. Rogers

Form PTO-1449 (REV. 7-92) U.S. DEPARTMENT OF COMMERCE
Patent and Trademark Office

INFORMATION DISCLOSURE STATEMENT

JJL

JJL-9602F

Serial No.

09/904,610

**BY APPLICANT** 

Use several sheets if necessary)

AU6 2 0 2001 S

Applicant(s): Jung, et al.

Attorney's Docket Number

Filing Date: July 12, 2001

Group Art Unit: 3732

## **U.S. PATENT DOCUMENTS**

*EXAMINER INITIAL			DOC	UMENT	NUMB	ER		06/67	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	3	3	2	7	5	8	4		Kissinger	356	375	
	3	4	3	6	1	5	7	04/69	H. Adler et al.			04/08/66
	3	5	0	7	0	4	2	04/70	N. A. Hana			04/14/69
	3	5	5	5	2	6	2	01/71	Shimada	235	193	05/0768
	3	7	4	3	4	2	9	07/73	Kawai			05/17/71
	3	7	4	8	7	4	1	07/73	Yerkes, Jr.	32	71	06/08/72
	3	7	7	8	5	4	1	12/73	Bowker			09/03/71
	3	9	4	0	6	0	8	2/1976	Kissinger	250	227	
	3	9	9	6	7	7	7	10/76	Roll			08/22/74
	4	0	,	4	3	8	9	10/77	Owen	356	419	
	4	1	1	5	9	2	2	09/78	Alderman	32	71	09/20/76
	4	1	2	5	3	2	9	11/78	French et al.	356	405	09/07/76
	4	1	8	4	1	7	5	01/80	Mullane, Jr.	356	237	02/09/77
	4	2	0	7	6	7	8	06/80	Jeannette	433	203	09/26/77
	4	2	4	1	7	3	8	12/80	Lübbers	128	666	04/10/78
	4	2	7	8	3	5	3	07/81	Ostermayer et al.	356	416	04/11/80
	4	2	9	0	4	3	3	09/81	Alfano	128	665	08/20/79
	4	3	2	4	5	4	6	04/82	Heitlinger et al.	433	25-	07/14/80
	4	3	8	2	7	8	4	05/83	Freller	433	260	0 <b>7.103</b> 2/80
	4	4	1	1	6	2	6	10/83	Becker et al.	433	20 5 223 G	01/09/81
	4	4	3	4	6	5	4	03/84	Hulsing II, et al.		23 MA	
	4	4	6	4	0	5	4	08/84	Karras, et al.	356	406 🔀	051217/82
	4	4	8	7	2	0	6	12/84	Aagard	128	60 60 404	
	4	5	0	5	5	8	9	03/85	Ott et al.	356	402	03/30/82
	4	5	6	0	2	7	5	12/85	Goetz	-	\ <u>-</u>	
	4	5	6	8	1	9	1	02/86	Barry	356	446	07/01/83
	4	5	7	5	8	9	5	3/86	Moermann et al.			
	4	6	1	6	9	3	3	10/86	Leveque, et al	356	416	_

/	6	-	P	TE	\
_	AU6	2	0	2001	°C34
~					-T-

4	6	5	屠	7	9	4 &	03/87	O'Brien	364	413	02/18/84
4	6	6	6	CS TR	rû <b>n</b> ê	63.	05/87	Barry et al.	356	446	07/01/83
 4	6	8	7	7 (§7R)	2	9	8/87	Schultz	356	328	
4	7	0	7	1	3	8	11/87	Coatney	356	402	
4	7	2	8	2	9	0	3/88	Eisner et al.	433	116	
4	7	3	0	9	2	2	3/88	Bach et al.	356	328	
4	7	7	3	0	6	3	09/88	Hunsperger et al.	370	3	11/13/84
 4	7	9	8	9	5	1	1/89	Walker	250	227	
4	8	2	3	1	6	9	04/89	Ogura	356	446	02/26/87
4	8	3	6	6	7	4	06/89	Lequime et al.	356	319	12/13/85
4	8	4	4	6	1	7	7/89	Kelderman et al.	356	328	
4	8	7	8	4	8	5	11/89	Adair	600	125	
4	8	8	1	8	1	1	11/89	O'Brien	356	73	
4	9	1	4	5	1	2	4/90	Sekiguchi	358	98	
4	9	1	7	5	0	0	04/90	Lugos	356	406	11/30/88
4	9	5	7	3	7	1	9/90	Pellicori et al.	356	419	12/11/87
4	9	6	6	4	5	8	10/90	Burns et al.	356	328	
4	9	8	6	6	7	1	1/91	Sun et al.	374	131	
4	9	8	8	2	0	6	01/91	Melleney et al.	356	446	04/26/86
5	0	1	7	7	7	2	05/91	Hafle		_	
5	0	2	8	ı	3	9	7/91	Kramer et al.			
5	0	4	0	9	4	0	08/91	Kolodziej et al.	414	764	11/01/89
5	0	9	5	2	1	0	3/92	Wheatley et al.	356	71	
5	1	3	9	3	3	5	8/92	Lundeen et al.	356	328	
5	1	4	2	3	8	3	8/92	Mallik	356	71	
5	1	5	9	1	9	9	10/92	LaBaw	356	328	
5	1	6	4	5	9	7	11/92	Lodder	356	338	
5	1	6	6	7	5	5	11/92	Gat	356	419	
 5	1	9	3	5	2	5	3/93	Silverstein	128	#1 40	RE
5	2	2	9	8	4	l	7/93	Taranowski et al.	356	406 5	มีเ <b>ป</b> /91
 5	2	4	5	4	0	4	9/93	Jannson et al.	356	3 <u>6</u> ω	N N
 5	3	0	6	1	4	4	4/94	Hibst et al.	433	200 200 243	
 5	3	0	8	7	7	1	5/94	Zhou et al.	436	G 23 200 201 29 000 201 504	
5	3	0	9	2	5	6	5/94	Takada et al.	358	504	
5	3	2	9	9	3	5	7/94	Takahashi			
5	3	6	9	4	8	1	11/94	Berg et al.	356	319	
5	3	7	1	5	8	6	12/94	- Chau	356	328	
5	3	7	7	6	6	9	1/95	Schultz			
5	3	8	3	0	2	0	01/95	Vieillefosse	356	326	12/15/92

 		$\perp L$	Alia	20	2001	34					
5	3	8	6	2	9	A STATE OF THE STA	01/95	Massen et al.	356	376	04/27/93
5	3	9	(%)	1	1	0	02/95	Yojima et al.	356	376	04/16/93
5	4	0	_	THAT	5	4	3/95	Richert	250	226	2/15/94
5	4	0	1	9	6	7	3/95	Stedman et al.	250	338.5	06/03/94
5	4	0	4	2	1	8	04/95	Nave et al.	356	301	11/18/93
 5	4	1	0	4	1	0	04/95	Yamazaki et al.	356	376	
 5	4	1	0	4	1	3	04/95	Sela	356	446	
 5	4	2	8	4	5	0	06/95	Vieillefosse et al.	356	405	12/20/93
5	4	5	0	1	9	3	09/95	Carlsen et al.	356	301	04/11/94
5	4	5	0	2	0	3	09/95	Penkethman	356	373	
5	4	5	0	5	1	1	09/95	Dragone	385	37	07/25/94
5	4	5	3	8	3	8	09/95	Danielian et al.	356	371	06/17/94
5	4	5	7	5	2	5	10/95	Ohtsuka et al.	356	3.06	07/19/94
5	4	6	1	4	7	6	10/95	Fournier	356	343	12/05/94
5	4	6	7	2	8	9	11/95	Abe et al.	364	560	10/12/93
5	4	6	9	2	4	9	11/95	Magyar, Jr. et al.	356	4:07	05/17/94
5	4	7	4	4	4	9	12/95	Loge et al.	433	29.0	RH
5	4	7	7	3	3	2	12/95	Stone et al.	356	3名5	04/03/95
5	4	8	3	3	3	5	01/96	Tobias	356	23 MA	04/05/94
5	4	8	7	6	6	1	1/96	Peithman	433	116- 12	日
5	4	9	7	2	2	7	3/96	Takeuchi et al.	356	71 ROOM	
5	4	9	8	1	5	7	03/96	Hall	433	26	09/93
5	5	3	3	6	2	8	7/1996	Tao	209	580	
5	5	6	0	3	5	5	10/96	Merchant et al.	356	41	12/17/93
5	5	6	5	9	7	6	10/96	Fleggen et al.	250	227.16	01/18/95
5	5	7	5	2	8	4	11/96	Athan et al.	356	41	4/1/94
5	5	8	3	6	3	1	12/96	Lazzerini	356	71	
5	5	9	0	2	5	1	12/96	Takagi	395	131	08/05/94
5	5	9	2	2	9	4	1/97	Ota et al.	356	402	
5	6	0	4	5	9	4	2/97	Juffinger	356	405	5/18/95
5	6	0	9	9	7	8	3/97	Giorgianni et al.	430	30	
5	6	2	5	4	5	9	04/97	Driver	356	446	03/03/95
5	6	6	8	6	3	3	09/97	Cheetam, et al.	356	402	10/03/95
5	6	7	1	7	3	5	09/97	MacFarlane, et al.	128	633	05/09/94
5	6	8	3	2	4	3	11/97	Andreiko et al.	433	24	
5	6	9	0	4	8	6	11/97	Zigelbaum	433	29	
5	6	9	5	9	4	9	12/97	Galen et al.	435	14	4/7/95
5	6	9	6	7	5	1	12/97	Juffinger	369	119	5/5/95
5	7	4	2	0	6	0	3/98	Ashburn	250	370.09	

6		E	7
AU6	2 0	2001	C34 30

				12										
	5	7	4	N.	e <sup>2</sup> TRA	2.48	TO THE	4/98	Jung et al.	356		73	1/2/96	
	5	7	5	4	2	8	3	5/98	Keane et al. 356		73			
	5	7	5	7	4	9	6	05/98	Yamazaki :	. 356		373		
	5	7	5	9	0	3	0	6/98	Jung et al.	433		29		
	5	7	6	6	0	0	6	6/98	Murljacic	433		26	06/26/95	
	5	7	7	4	6	1	0	06/98	O'Rourke et al.	385		52	07/08/9	96
	5	7	8	4	5	0	7	07/98	Holm-Kennedy et al.	385		31	04/26/9	94
	5	7	9	8	8	3	9	8/98	Berner et al.	356		402	12/02/9	96
	5	8	2	2	4	7	4	10/98	Hara	385		24	08/07/9	96
	5	8	5	0	1	9	5	12/98	Berlien, Jr. et al.	341	-	137		
	5	8	5	0	3	0	1	12/98	Mizuochi et al.	359		124	04/30/9	98
	5	8	8	0	8	2	6	3/99	Jung et al.	433		29		
	5	8	8	3	7	0	8	3/99	Jung et al.	356		371		
	5	9	2	4	9	8	1	7/99	Rothfritz et al.	600		306	04/03/9	98
	5	9	6	1	3	2	4	10/99	Lehmann	433		26	5/20/98	3
:	5	9	6	1	3	2	7	10/99	Lohn	433		80		
	5	9	8	9	0	2	2	11/99	Yamamoto et al.	433		26		
	5	9	9	5	2	3	5	11/99	Sui et al.	356		419		
	6	0	0	2	4	8	8	12/99	Berg et al.	356		418		
	6	0	0	7	3	3	2	12/99	O'Brien	433		26		
	6	0	0	8	9	0	5	12/99	Breton et al.	356		402		
	6	0	3	0	2	0	9	2/2000	Panzera et al.	433		26		
	6	0	3	1	9	2	8	2/2000	Scott	382		108		
	6	0	3	8	0	2	4	3/2000	Berner	356		326		
	6	0	4	0	9	0	2	3/2000	Jung et al.	356		73	8/12/97	7
	6	0	5	2	1	9	5	4/2000	Mestha et al.	356		<del>.4</del> 25	425	
	6	0	5	7	9	2	5	5/2000	Anthon	356		47 063 AUG	고 -	
	6	0	8	6	2	7	4	7/2000	Krzyminski	400		263 C	$\Box$	
						F	ORI	EIGN I	PATENT DOCUMENT	'S		23 2001 MAIL RO	EIVED	
	DOCUMENT NUMBER					<u>.</u>	r	DATE	COUNTRY		CLASS	GUBCLASS	TRAN	SLATION
	0	1	6	7	7	5	0	1/86	Lingenfelter (EPO) 356		328			
i	0	6	8	1	2	5	6	11/95	Juffinger (EPO)					
	_			٦	5	2	6	05/92	Tretout (France)		433	203.1		x
	2	6	6	9					Swinson, Jr. (Germany) 356			,		
	2	6	5	6	3	5	5	12/73	Swinson, Jr. (Germany)		356	402		X
		<u> </u>					5	12/73 6/86	Swinson, Jr. (Germany)  Di Matta (PCT)		356 433	402 203.1		x



	OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)
	Aswell, Cecil J. et al., "A Monolithic Light-to-Frequency Converter with a Scalable Sensor Array", IEEE, 1994, pp. 122-123 and 158-159.
	Bangtson et al.; "The conversion of Chromascan designations to CIE tristimilus values"; Nov. 1982; pp 610-617 Vol. 48 No. 5, Journal of Prosthetic Dentistry
	Barghi et al.; "Effects of batch variation on shade of dental porcelain"; Nov. 1985; pp 625-627, Vol. 54 No. 5, Journal of Prosthetic Dentistry
	Council on Dental Materials, Instruments, and Equipment; "How to improve shade matching in the dental operatory"; Feb. 1981; pp 209-210, Vol. 102; JADA
	Davison et al.; "Shade selection by color vision-defective dental personnel"; Jan. 1990; pp 97-101 Vol. 63 No. 1, Journal of Prosthetic Dentistry
	Demro, James C., R. Hartshome, P.A. Levine, L.M. Woody, "Design of Multispectral, Wedge Filter, Remote-Sensing Instrument incorporating a multi-port, thinned, CCD area array" SPIE Vol. 2480 p. 280.
	Dickerson; "Trilogy of Creating an Esthetic Smile"; Jul. 1996; pp 1-7, Vol. 1, Issue 3; Technical Update-A Publication of Micro Dental Laboratories
	Elerding, George T. John G. Thunen, Loren M. Woody "Wedge Imaging Spectrometer: Application to drug and pollution law enforcement" SPIE Vol. 1479 Surveillance Technologies, p. 380 (1991).
	Goldstein et al.; "Repeatability of a specially designed intraoral colorimeter"; Jun. 1993; pp 616-619, Vol. 69 No. 6, Journal of Prosthetic Dentistry
	Goodkind et al.; "A comparison of Chromascan and spectrophotometric color measurement of 100 natural teeth"; Jan. 1985; pp 105-109, Vol. 53 No. 1, Journal of Prosthetic Dentistry
	Ishikawa et al.; "Trial Manufacture of Photoelectric Colorimeter Using Optical Fibers"; Nov. 1969; pp 191-197, Vol. 10, No. 4, Bull. Tokyo dent. Coll.
	Johnston et al.; "The Color Accuracy of the Kubelka-Munk Theory for Various Colorants in Maxillofacial Prosthetic Material"; Sep. 1987; pp 1438-1444, Vol. 66, No. 9; J. Dent. Res.
	Johnston et al.; "Assessment of Appearance Match by Visual Observation and Clinical Colorimetry"; May 1989; pp 8 193822, Vol.168, No. 5; J. Dent. Res.
	Kato et al; "The Current State of Porcelain Shades: A Discussion"; Oct. 1984; pp 559-571, Vol. 8, No. 9; Quintessence Of Dental Technology
	Mika, Aram M., "Linear-Wedge Spectrometer" SPIE Vol. 1298 Imaging Spectroscopy of the Terrestrial Environment, p. 127 (1990).
	Miller; "Organizing color in dentistry"; Dec. 1987; pp 26E-40E, Special Issue; JADA
	Miller et al; "Shade selection and laboratory communication"; May 1993; pp 305-309, Vol. 24, No. 5; Quintessen International
	O'Brien et al.; "Coverage Errors of Two Shade Guides"; Jan/Feb. 1991; pp 45-50, Vol. 4, No. 1; The International Journal of Prosthodontics
	O'Brien et al.; "A New, Small-color-difference Equation for Dental Shades"; Nov. 1990; pp 1762-1764, Vol. 69, No. 11; J. Dent. Res.
	O'Keefe et al.; "Color Shade and Matching: The Weak Link in Esthetic Dentistry"; Feb. 1990; pp 116-120, Vol. XI, No. 2, Compend Contin Educ Dent
	Pensler; "A New Approach to Shade Selection"; Sep. 1991; pp 668-675, Vol. XII, No. 9, Compend Contin Educ Dent
	Preston et al.; "Light and Lighting in the Dental Office"; Jul. 1978; pp 431-451, Vol. 22, No. 3; Dental Clinics of North America
	Preston; "Current status of shade selection and color matching"; Jan. 1985; pp 47-58, Vol. 16, No. 1; Quintessence International
	Rosenstiel et al.; "The effects of manipulative variables on the color of ceramic metal restorations"; Sep. 1987; pp 297-303, Vol. 60 No. 3, Journal of Prosthetic Dentistry
	Rugh et al.; "The Relationship Between Elastomer Opacity, Colorimeter Beam Size, and Measured Colorimetric Response"; Nov/Dec 1991; pp 569-576, Vol. 4, No. 6; The International Journal of Prosthodontics
	Ryther et al.; "Colormetric Evaluation of Shade Guide Variability"; 1993; pg. 215; J. Dent. Res. 72 (IADR Abstracts) Special Issue
	Schwabacher et al.; "Three-dimensional color coordinates of natural teeth compared with three shade guides"; Oct. 1990; pp 425-431, Vol. 64 No. 4, Journal of Prosthetic Dentistry
	Seghi et al.; "Spectrophotometric analysis of color differences between porcelain systems"; Jul. 1986; pp 35-40, Vol. 56 No. 1, Journal of Prosthetic Dentistry
1	Seghi et al.; "Visual and Instrumental Colorimetric Assessments of Small Color Differences on Translucent Dental Porcelain"; Dec. 1989; pp 1760-

\*) \* \* \*

AUG 2 0 2001 3

*EXAMINER:	Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.										
EXAMINER	DATE CONSIDERED										
	van der Burgt et al.; "A comparison of new and conventional methods for quantification of tooth color"; Feb. 1990; pp 155-162, Vol. 63 No. 2, Journal of Prosthetic Dentistry										
	Swift et al.; "Colormetric Evaluation of Vita Shade Resin Composites"; 1994; pp 356-361, Vol. 7, No. 4; The International Journal of Prosthodontics										
	Sproul; "Color matching in dentistry. Part 2. Practical applications of the organization of color"; May 1973; pp 556-566, Vol. 29, No. 5; J. Prosthet. Dent.										
	Sproul; "Color matching in dentistry. Part 1. Color control"; Feb. 1974; pp 146-154, Vol. 31, No. 2; J. Prosthet. Dent.										
	Sproul; "Color matching in dentistry. Part 1. The three-dimensional nature of color"; Apr. 1973; pp 416-424, Vol. 29, No. 4; J. Prosthet. Dent.										
	Sorensen et al.; "Improved color matching of metal-ceramic restorations. Part II: Procedures for visual communication"; Dec. 1987; pp 669-677, Vol. 58, No. 6, Journal of Prosthetic Dentistry										
	Sorensen et al.; "Improved color matching of metal-ceramic restorations. Part I: A systematic method for shade determination"; Aug. 1987; pp 133-139, Vol. 58, No. 2, Journal of Prosthetic Dentistry										
	Seghi; "Effects of Instrument-measuring Geometry on Colorimetric Assessments of Dental Porcelains"; May. 1990; pp 1180-1183, Vol. 69, No. 5; J. Dent. Res.										
	Seghi et al.; Assessment of Colorimetric Devices on Dental Porcelains"; Dec. 1989; pp 1755-1759, Vol. 69, No. 11; J. Dent. Res.										
	1764, VII 68, No. 12; J. Departes.										

RECEIVED AUG 23 2001 TC 3700 MAIL ROOM